PLAYER MANUAL
(ALL VERSIONS)

CARRIER FORCE™

SANTA CRUZ
MIDWAY
SOLOMONS
CORAL SEA

STRATEGIC SIMULATIONS INC

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1.0 INTRODUCTION

CARRIER FORCE™ is an operational level game featuring combat between American and Japanese carrier task forces in 1942. Included are scenarios covering the battles of CORAL SEA, MIDWAY, EASTERN SOLOMONS and SANTA CRUZ.

1.1 Description of Action

Each game turn represents one hour of actions. Actions consist of maneuvering task forces; launching search, patrol and bomber missions; arming & fueling aircraft; recovering aircraft; moving air groups and resolving combat situations.

1.2 Talking to the Computer

To enter a response to the computer that consists of numbers (such as ship identification numbers), type the number into the computer and press the <RETURN> key. To select a routine from a menu or answer a Yes/No question, just press the desired key.

TO EXIT A ROUTINE WHERE THE EXIT COMMAND IS NOT SPECIFIED, PRESS <Q> THEN <RETURN>. Some menus do not require the user to press <RETURN> after pressing the <Q> key.

1.3 Saving a Game

At the end of each game turn the computer will allow the player(s) to save the game in progress. You will need a scratch disk to store the saved game data. Apple Save-Game disks may be initialized for SSI use during the game by following instructions included in the game program. Atari or C-64 games may be saved on any properly initialized diskette. Once a game is saved, you will be able to restart it at the point you left off.

When restarting a saved game, you must set the correct scenario, solitaire level and number of players on the opening menu.

1.4 The Map

There are two maps included with the game. The Midway scenario employs a map of the Central Pacific centering on the island of Midway. All other scenarios use a map of the Southwest Pacific centering on the Solomon Islands. Movement around the maps is controlled by a hexagon grid system (31 × 32 hexes) with each hexagon representing 50 nautical miles.

1.5 Starting the Game (Apple DOS 3.2 or 3.3)

To begin the game, boot your game disk and the game will begin automatically. If you are using an Apple II with Pascal, you must first use your BASICS disk. If you are using an Apple III, you must first go into Apple II emulation mode.

1.6 Starting the Game (Atari)

To begin the game, boot the Scenario side of your disk. After selecting the starting values for your game you will be told to insert the Game side of your disk. This game requires the use of the Basic cartridge.

1.7 Starting the Game (C-64)

To begin the game, insert the game disk into the disk drive. Type LOAD"*",8 and press <RETURN>. When READY appears, type RUN and press <RETURN>.

2.0 GENERAL DESCRIPTION

2.1 Parts Inventory:

A. Game box
B. Rule Book
C. 5¼" game disk
D. Two map data cards

2.2 Abbreviations:

Abbreviations used in the game are listed below.

CV	aircraft carrier
CVL	light aircraft carrier
BB	battleship
CA	heavy cruiser
CL	light cruiser
CLAA	anti-aircraft cruiser
CS	seaplane carrier
AV	seaplane tender
DD	destroyer
DE	destroyer escort
APD	patrol boat
ML	minelayer
MSW	minesweeper
TR	transport
TK	tanker/oiler
SS	submarine

MG	main guns
AA	anti-aircraft guns
TT	torpedoes
AM	bombardment ammunition
SP	seaplanes
MS	maximum speed
AP	assault points
DM	damage percentage
FL	fire level
CAP	base capacity
A/C	aircraft
OL	operation limit
OU	operations used
BO	bomber ordnance
TF	task force

3.0 SEQUENCE OF PLAY

CARRIER FORCE is a two-sided game: American vs. Japanese. The American forces must be commanded by a human player. The Japanese forces may be commanded by either a human or the computer.

3.1 Scenario Selection Phase

During the scenario selection phase, the player(s) select a scenario and determine the conditions under which the game will be played. On the Apple version the set-up may be changed by entering the following numbers:

(1) New Game or Saved Game
(2) 1 Disk Drive or 2 Disk Drives
(3) Solitaire or 2 Players
(4) Solitaire Level of Difficulty

The scenario may be altered by entering the following numbers:

(5) Coral Sea
(6) Midway
(7) Eastern Solomons
(8) Santa Cruz

On the Atari and Commodore 64 versions:

(1) New Game or Saved Game
(2) Solitaire or 2 Players
(3) Solitaire Level of Difficulty

(4) Coral Sea
(5) Midway
(6) Eastern Solomons
(7) Santa Cruz

3.2 Historical Set-Up

At the start of each game the computer will assign all ships and aircraft to their historical locations prior to the battle.

3.3 Random Set-Up

The players may randomize the set-up somewhat in all scenarios except CORAL SEA. In the MIDWAY scenario both American and Japanese carrier TFs will have their historical locations altered. In EASTERN SOLOMONS and SANTA CRUZ all Japanese TFs will have their locations altered.

3.4 Sequence of Play

1. American TF Adjustment Phase
2. Japanese TF Adjustment Phase
3. Japanese Adjust TF Heading
4. Japanese Launch Air Missions
5. Japanese Arm & Fuel Aircraft
6. Japanese Land Aircraft
7. Japanese Move Air Missions
8. American Radar Report
9. American Adjust TF Heading
10. American Launch Air Missions
11. American Arm & Fuel Aircraft
12. American Land Aircraft
13. American Move Air Missions
14. Combat Resolution Phase
15. Save-Game Phase

3.5 Keeping Time

Each game turn represents one hour. At the start of each turn the clock, calendar and weather are adjusted to reflect the passage of time and the changing battle conditions. Daylight hours are 600 to 1800 (inclusive).

4.0 TASK FORCE ADJUSTMENT PHASE

During the task force adjustment phase the computer will display a menu listing two options for adjusting the composition of your task forces and five options for viewing the current status of your forces. To enter the desired routine just press the corresponding numbered key.

4.1 Dividing Task Forces

Enter the number of the task force you wish to divide. The computer will list the ships in the selected task force and display their maximum speed, damage and fire levels.

The maximum number of task forces that the Japanese player may use is equal to 10 minus the number of Japanese land bases for that scenario. The maximum number of task forces that the American player may use is equal to 9 minus the number of American land bases for that scenario. If you are currently using the maximum number of task forces then the computer will not allow you to divide a task force.

If you currently have less than the maximum number then the computer will display the number of the new task force you are creating. Enter the ID number for each ship you wish to transfer to the new task force. When you have concluded your transfers just press <RETURN> to exit the routine.

If you are currently using fewer than the maximum number of task forces then the divide task force routine may be used to "scuttle" crippled ships. Just enter the letter "S" following the ID number of the ship you are transferring (entering a "5S" would scuttle ship #5).

4.2 Transferring Ships

Enter the numbers of the "gaining" and "losing" task forces. The two task forces must occupy the same hexagon on the map.

The procedure for transferring ships is the same as described in 4.1. A task force may never contain more than 20 ships.

When a ship transfer occurs, the gaining task force's movement points will be adjusted to equal that of either the gaining or losing task force (whichever is lowest).

4.3 Ending the Game

Both players should agree before ending the game. The computer will display the final score and a list of all ships sunk during play.

4.4 The Map Display

The maps used in Carrier Force employ a hexagon grid 32 hexes high by 31 hexes wide. Only a fraction of the map (7 hexes high by 13 hexes wide) can be viewed at one time. By pressing the keys 1-6 the cursor can be moved around the map (1-N, 2-NE, 3-SE, 4-S, 5-SW, 6-NW). If the cursor is moved to the edge of the display then the map display will scroll to reveal the hidden portions of the map.

American task force symbols will be colored blue and Japanese task force symbols will be colored orange (on the Apple computer American task forces that occupy an island or base hex will be colored purple; Japanese task forces that occupy an island or base hex will be colored green). American and Japanese TFs stacked together will have a WHITE symbol. To check the friendly task force numbers in the hex occupied by the cursor press the (8)LOOK key. To return to the main menu press the (0)EXIT key.

5.0 TASK FORCE MOVEMENT

Task force movement occurs at the end of each game turn after all combat has been resolved. A task force that has accumulated 50 or more movement points will move one hex (the direction of movement is determined by the task force heading). A task force that moves will have 50 subtracted from its movement point total.

5.1 Fleet Speed

At the start of each turn a task force will gain movement points equal to its fleet speed. The fleet speed will be equal to 30 OR the maximum speed of the slowest ship in the task force, which ever is lower.

5.2 Loss of Movement Points

During the course of each turn a task force may perform certain actions that will cause it to LOSE movement points. A task force that changes heading will lose 50% of its movement points for each compass point shift in direction (the movement point total will never be reduced below the TF's FLEET SPEED when changing direction).

A task force will lose movement points if it contains aircraft carriers that launch or recover aircraft AND the task force is not moving in the game direction that the wind is blowing FROM. If the task force heading is one compass point different from the wind direction (example: wind is blowing from the NE and the task is moving N) it will lose 5% of its movement points for each aircraft that is launched or landed in the task force. If the task force heading is more than one compass point different from the wind direction it will lose 10% of its movement points for each aircraft that is launched or landed in the task force. This movement loss is due to the need for carriers to turn into the wind whenever they launch aircraft, thus preventing their task force from moving forward at full speed.

5.3 Movement Restrictions

A task force may never move through a white hexside, but instead will continue to accumulate movement points up to a maximum of 79. A task force may move off the edge of the map (it will not be allowed to return).

6.0 LAUNCHING AIR MISSIONS

Land bases and aircraft carriers may launch fighter and bomber missions. Land bases and Japanese BB, CA, CL, CS and AV type ships may launch seaplane missions. Each player may have a maximum of 20 air missions active at any one time.

6.1 Seaplane Missions

A seaplane mission consists of one seaplane with the single function of searching for enemy ships. Ship launched seaplanes have an endurance of 6 turns. Land based seaplanes have an endurance of 18 turns. Seaplanes may only be recovered by the ship/base from which they were launched. Launching or recovering seaplanes does not count against a base's OPERATION LIMIT.

6.2 Combat Missions

The type of mission that may be flown by combat aircraft is determined by the type of aircraft included and/or the type of ordnance being carried. Listed below are the types of missions and their descriptions:

F (fighter patrol)
Consists entirely of fighter type aircraft. Used to protect friendly bases or task forces.

AS (anti-ship)
Consists of bombers carrying torpedoes and/or armor piercing bombs. May not be used to attack enemy bases. May include a fighter escort.

HE (high-explosive)
Consists of bombers carrying high explosive bombs. Best suited for attacking enemy bases. May attack enemy ships at reduced effectiveness. May include a fighter escort.

N (not armed)
Consists of unarmed bombers that have completed/aborted their mission or were launched for search only. May include a fighter escort. Also may consist of unarmed Judy reconnaissance planes without a fighter escort.

In order to launch an AS mission, the bombers must have been readied during a previous turn with AS ordnance. In order to launch an HE mission, the bombers must have been readied during a previous turn with HE ordnance.

6.3 Operation Limits

Each base and carrier is assigned a limit to the number of aircraft it may launch and land in one turn (each aircraft launched or landed equals one flight operation). Carriers have a flexible operation limit that varies with the carrier TF heading in relation to the wind direction. The land base operation limits never change.

If a carrier TF heading is TWO or more compass points different from the wind direction then the carrier must conform to its MINIMUM OPERATION LIMIT for that turn. If a carrier TF heading is ONE compass point different from the wind direction then the carrier must conform to its INTERMEDIATE OPERATION LIMIT for that turn. If a carrier TF heading is the same as the wind direction then the carrier must conform to its MAXIMUM OPERATION LIMIT for that turn.

The intermediate operation limit will always be DOUBLE the minimum operation limit. The maximum operation limit will always be TRIPLE the minimum operation limit.

Listed below are the MINIMUM operation limits for carriers included in the game:

Akagi	12	Lexington	12
Kaga	12	Saratoga	12
Hiryu	12	Yorktown	12
Soryu	12	Enterprise	12
Shokaku	12	Hornet	12
Zuikaku	12	Wasp	11
Junyo	9		
Shoho	6		
Zuiho	6		
Ryujo	6		
Hosho	3		

If for any reason during a turn an aircraft carrier is unable to conduct further air operations then its operations used (OU) will be set to 99.

6.4 Forming Air Missions

Air missions may be formed from available seaplanes or readied combat aircraft. It is possible to form a new mission from one carrier/base and then reinforce it with aircraft from another carrier/base within the same hex. When reinforcing a mission that has been in the air for one or more turns the reinforcing aircraft will be assumed to have been in the air as long as the original aircraft. Bombers carrying AS ordnance may not be combined in the same mission as bombers carrying HE ordnance. Air missions cannot be split up after they have formed.

Large air missions will suffer a movement point loss on the turn they are launched. Missions that have been in the air for one or more turns will suffer no movement loss if reinforced.

There is a loss of one movement point for approximately every 15 planes in the mission (this will vary randomly) plus the loss of one MP automatically on the first turn a mission is in the air. A maximum of 3 movement points may be lost in this manner.

7.0 ARMING & FUELING AIRCRAFT

Combat aircraft must be armed & fueled (readied) and moved on to the deck/runway before they may be launched on air missions.

7.1 Bomber Ordnance Selection

A bomber ordnance selection (AS, HE or N) must be made for each carrier and base. All bombers readied on a carrier or base will be armed with the selected ordnance type.

7.2 Deck/Runway Capacity

The deck/runway capacity for a carrier/base represents the maximum number of aircraft that may be readied at one time (readied aircraft are always considered to be on the deck/runway). The deck/runway capacity is equal to the carrier/base MAXIMUM OPERATION LIMIT.

7.3 Removing Aircraft From the Deck/Runway

Readied aircraft may be removed from the deck/runway. Enter the READY AIRCRAFT routine and type a minus number for the quantity of each type of aircraft you wish to un-ready.

8.0 AIR MOVEMENT

During the air movement phase air missions may move, search, initiate combat and/or enter a landing pattern. Air missions movement is completed sequentially according to air mission number.

8.1 Air Mission Status Display

Prior to moving each air mission the players may view the status display for that mission. The status display lists the data:

(1) mission location
(2) mission number
(3) time in the air
(4) quantity of each type of aircraft
(5) ordnance carried by each aircraft type
(6) air time remaining for each aircraft type

For bomber type missions you will be allowed to "jettision ordnance" before moving the air mission. This increases the air units movement allowance by 1.

8.2 Air Move Display

After exiting the mission status display, the map will be drawn on the screen with the cursor indicating the current location of the air mission. The menu at the bottom of the screen will indicate the players options:

(1) move north
(2) move northeast
(3) move southeast
(4) move south
(5) move southwest
(6) move northwest
(7) land
(8) search current hex using all remaining move points
(9) identify TF numbers of friendly TFs in same hex
(0) search current hex using only 1 move point

Also displayed is the air mission's X/Y LOCATION coordinates and its remaining MOVEMENT POINTS.

Seaplane (SP) missions that select option **(7)** will land immediately if their home base/ship is in the same hex. Other missions that select option **(7)** will enter a landing pattern if a friendly base is in the same hex.

8.3 Searching

Each time an air mission moves into a hex it will search for enemy TFs in that hex. An air mission may search its current hex without moving by using the SEARCH options **(8)** or **(0)**. In 0% overcast weather an air mission has a 50% chance of locating each enemy TF in the hex for each movement point it spends searching that hex (100% in a base/island hex). The 50% chance of locating assumes 20 ships in the TF. For smaller TFs the chance may be as low as 40%. In addition bad weather will further lower the % chance of spotting enemy TF's.

Only HE missions may locate (and attack) enemy bases. Air missions may fly at night; however no searching will occur.

8.4 Sighting Reports

When an air mission locates an enemy TF the player will receive a "sighting report". The sighting report will list the ship type abbreviations for each ship sighted. Sighting reports will not be entirely accurate. Sighting reports will not be received if non-bomber missions locate an enemy TF that had been previously located in the same turn. Bomber missions will be given the option to declare an attack after sighting an enemy TF.

8.5 Engaging Enemy Aircraft

For each movement point an air mission expends in a hex containing enemy aircraft there is a chance of initiating air-to-air combat. The chance of initiating combat varies with the size of friendly and enemy air missions and the weather. Air-to-air combat will only occur if one of the air missions involved is a fighter patrol (F).

If a fighter mission expends movement points in a hex containing enemy aircraft then it may only engage the enemy missions armed with bombs. If a non-fighter mission expends move points in a hex containing enemy aircraft then it may only engage the enemy fighter missions in the hex.

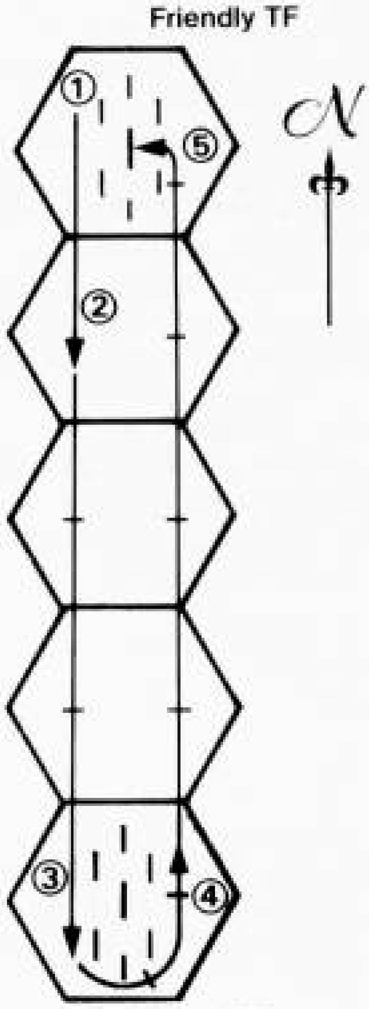
When opposing air missions engage in combat the mission with the fewest aircraft will be unable to move any further that turn.

8.6 Movement Points

An air mission assumes the speed of the slowest aircraft type included in the mission. One movement point is subtracted from the speed if any of the aircraft in the mission are carrying bombs or torpedoes. If a bomber mission declares an attack before it has used all of its movement points then the unused points will be added to its next turn's move.

Listed below are the maximum speeds of the aircraft in the game:

ZEKE	4	SBD	4
VAL	4	SB2U	3
KATE	4	TBD	3
BETTY	4	TBF	4
NELL	3	B26	4
JUDY	4	B25	4
F4F	4	B17	4
F2A	4	A24	4
P39	5	SEAPLANE	3



(1) Form 20 SBD Plane strike. Loss of 1 MP due to size of strike. Automatic loss of 1 MP from take-off (total loss of 2MP).
(2) Movement during first turn in air.
(3) Movement during second turn in air. One MP is expended over the enemy TF but it is not spotted.
(4) Spends two MP during third turn in the air searching for enemy and finds enemy TF on second MP. Bombing of enemy TF occurs. If the strike had failed to locate a target on its second MP it would have been forced to give up the search and fly north in order to return to its carrier before running out of fuel.
(5) With 0 time remaining in the air the strike must land on its base this turn. The strike has 5MP (4 without bombs + 1 for the MP that was not used on the previous turn due to bombing of the enemy TF). On the fifth movement point the strike enters a landing pattern. The strike will land on its carrier during the next turn if at that time all conditions for landing are met.

9.0 LANDING AIRCRAFT

Aircraft that enter a TF landing pattern must land during the next turn or be forced to ditch. Aircraft in a TF landing pattern may land on any eligible carrier (or base) present in the subject TF.

9.1 Restrictions on Landings

A carrier/base is eligible to recover aircraft only if the following conditions are met:

(1) the flight operations USED during the turn are less than the OPERATION LIMIT.

(2) the readied aircraft on deck do not exceed the carrier's MINIMUM OPERATION LIMIT.

(3) the total number of aircraft on the carrier/base is less than the maximum capacity.

Land bases do not have to conform to item (2) above. Also, land bases may always land a number of planes equal to their MAXIMUM OPERATION LIMIT without regard to the number of planes that have been launched from the base during the turn (i.e., Midway with an OL of 75 could launch up to 75 planes during a turn and then land up to 75 planes during the same turn).

9.2 Emergency Landings

After the landing phase has been completed all planes remaining in a landing pattern will attempt emergency landings if possible. These planes will land on any base or operational carrier in the same hex, as long as it has not exceeded its operation limit. The computer will conduct emergency landings automatically.

10.0 COMBAT RESOLUTION

During the Combat Resolution Phase the computer will automatically perform the following functions:

(1) air to air combat resolution
(2) air to surface combat resolution
(3) surface combat resolution.
(4) submarine combat resolution
(5) coastal bombardment
(6) unload transports

10.1 Air to Air Combat

Air to air combat is initiated during the Air Movement Phase. Air to air combat consists of a fighter mission attacking a non-fighter mission. If the non-fighter mission has a fighter escort then the surviving escorts will counterattack the fighter mission.

Each fighter in the attacking group will select a target from the aircraft types in the defending group. If the defending aircraft survives the attack then it will counterattack with DEFENSIVE FIRE.

Each type of aircraft is rated for air-attack and survivability as shown below:

	ATTACK	SURVIVE
C. ZEKE	20	20
L. ZEKE	17	17
F4F	17	20
F2A	10	5
P39	12	10
VAL	(2)	3
KATE	(2)	3
BETTY	(2)	3
NELL	(2)	3
JUDY	(2)	5
SBD	(4)	9
TBD	(1)	1
TBF	(4)	8
SB2U	(1)	1
B26	(5)	10
B25	(5)	10
B17	(12)	25
A24	(4)	9
SEAPLANE	(0)	0

The ( ) indicate defensive fire only.

10.2 Air to Surface Combat

Each bomber that survives air to air combat will select a target ship from those in the target TF and attempt to penetrate the TF's flak and deliver its ordnance. Target selection is accomplished in the following manner: each ship is assigned a selection value (SV) equal to its defense factor plus its aircraft and/or assault point capacity (add 1000 to the SV if the ship is a carrier). The chance of a particular ship being attacked is equal to the SV of that ship divided by the combined SV of the target TF.

The chance of a bomber being shot down by flak is equal to the TF flak strength divided by 1200. The TF flak strength is equal to the combined AA ratings (number of AA guns) of all the ships in the TF. AA fire directed at B17s will be only 10% as effective as against all other aircraft.

The AA ratings of American ships will be adjusted for each scenario as follows:

Coral Sea	x1.5
Midway	x2.0
Eastern Solomons	x2.5
Santa Cruz	x3.0

Submarines may be sighted and bombed the same as surface ships. Submarines may "dive" before all of the bombers in a mission can complete their attacks.

10.3 Bomber Accuracy

The chance of a bomber hitting the target is affected by: (1) bomber accuracy (2) maximum speed of target (3) flak intensity (4) size of target. The relative accuracy of each bomber is listed below:

*VAL	15	TBD-B	1
*KATE-T	7	TBF-T	2
*KATE-B	3	TBF-B	1
BETTY-T	4	SB2U	1
BETTY-B	2	A24	1
NELL	1	B26	1
*SBD	9	B25	1
TBD-T	2	B17	1

T = torpedo B = high explosive bomb

* In the Midway scenario the land based SBDs have an accuracy of 1. The land based VALs and KATEs are 50% as accurate as the carrier based versions.

10.4 Bombing Bases

All bombers are equally accurate when attacking enemy bases. Base attacks may result in damage to the airfield and/or destroy aircraft on the ground (including seaplanes) and assault points. During base attacks, aircraft on the runway will be easier to destroy than aircraft in the hangar.

10.5 Surface Combat

Surface combat may occur between opposing TFs that occupy the same hex on the map. Surface combat may require up to four rounds of action as listed below:

Round 1: fire BB main guns
Round 2: fire BB, CA main guns
Round 3: fire all main guns
Round 4: fire all main & AA guns, fire torpedoes

In daylight, surface combat begins with round 1 and continues through round 4 OR until the TFs disengage. At night surface combat begins with round 3. After each round of combat there is a 50% chance that the TFs will disengage.

During each round of combat each eligible ship may select a target and fire its eligible weapons. Target selection is similar to bomber attacks (as a general rule the large guns will concentrate on large targets while AA guns and torpedoes will ignore target size).

In surface combat the larger, slower ships will be easier to hit than the smaller, faster ships. Japanese torpedoes will be 10 times more accurate than American torpedoes.

There is a 36% chance that any task force will engage any enemy task force in the same hex. Exception: enemy task forces in a base hex will always engage in surface combat.

10.6 Submarine Combat

Submarine groups patrol an area equal to the hex they occupy plus the six adjacent hexes. Each turn, submarine groups have a chance to attack any enemy TF that is within its patrol area.

The chance of attacking an enemy TF varies with (1) the number of submarines in the attacking group (2) the number of ships in the target group. Only one of the submarines in the group will actually conduct the attack. The attacking submarine will fire up to six torpedoes at a ship in the target TF.

The accuracy of Japanese submarine torpedoes is 5 times greater than the accuracy of American submarine torpedoes. As in surface combat the larger, slower targets will be easier to hit than the smaller, faster targets.

After the submarine attacks, each escort (DD, DE, APD) in the target TF will attempt to locate and depth charge the submarine. Each escort has a 10% chance of locating and attacking the submarine. Each Japanese depth charge attack has a 1% chance of sinking the submarine. Each American depth charge attack has a 4% chance of sinking the submarine.

10.7 Coastal Bombardment

In the Midway scenario Japanese ships may bombard Midway. In the Eastern Solomons and Santa Cruz scenarios Japanese ships may bombard Henderson Field. If a Japanese TF occupies the Midway/Henderson Field hex then all ships in the TF with bombardment ammunition may bombard the airfield.

Ships may perform only 1 bombardment per game. The effects of bombardments are similar to the effects of air attacks on bases. Listed below is the relative bombardment effectiveness of Japanese ships:

battleship	40
heavy cruiser	15
light crusier	5
destroyer	1

The above ratings may vary with the different number of guns mounted on each class of ship. NOTE: the above ratings indicate that a battleship is as effective as 40 bombers, etc.

10.8 Unloading Transports

Japanese transports and some other ship types (DD, MSW, ML, CS, AV, APD) may carry assault points. Assault points are combinations of troops, equipment and supplies used in the invasion of an enemy base. In all of scenarios the Japanese player may score victory points by unloading assault points on a particular base:

SCENARIO	**BASE**
Coral Sea	Port Moresby
Midway	Midway
Eastern Solomons	Henderson Field
Santa Cruz	Henderson Field

To unload at a base the transport TF must occupy the same hex as the base. Japanese transports may not unload on Midway when the base is at less than 50% damage. Transports may unload only ONE assault point per turn.

10.9 Capturing Midway

In the Midway scenario only, the Japanese player may capture an American base. If the number of Japanese assault points unloaded on Midway is greater than the number of American assault points defending Midway then the Japanese will capture the island.

If Midway is captured then all American aircraft and assault points on the island will be destroyed. The Japanese player may never USE the airfield during the game.

10.10 Battle Reports

As the computer resolves the combat situations the players will receive battle reports. Reports of aircraft destroyed or hits scored on ships will be exaggerated. Damage estimates will be displayed after each bombing attack to report the visible damage to an enemy base or ships in the target TF. The damage estimate will display "*" for each ship with "light damage"; "**" for each ship with "moderate damage" and "***"for each ship with "heavy damage". Damage estimates will be frequently exaggerated.

During surface combat, gunfire hits may be followed by one or more "*" symbols. The number of symbols displayed indicates the calibre of the firing gun.

11.0 GENERAL OPERATIONS

11.1 Aircraft Endurance

Each aircraft type is assigned an endurance rating that represents the number of hours it may remain in the air:

C. ZEKE	4	P39	2
L. ZEKE	9	SBD	3
VAL	4	TBD	3
KATE	4	TBF	4
BETTY	12	SB2U	4
NELL	10	A24	3
JUDY	4	B26	5
F4F	3	B25	6
F2A	3	B17	10

SEAPLANES:	
land based	18
ship based	6

Aircraft with "**0 MIN**" of fuel remaining must enter a landing pattern by the end of their current move (it requires 1 move point to enter a landing pattern) or they will automatically "ditch" at the start of their next move. Bombers with "**0 MIN**" of fuel will automatically jettison their ordnance. Fighter missions with "**0 MIN**" of fuel will be unable to initiate air to air combat.

Example: A VAL group could fly 4 turns, enter a landing pattern on the 5th turn and land on the 6th turn.

11.2 Ship Damage

Ships receive damage each time they are hit by bombs, torpedoes or gunfire. Ships with damage greater than 50% or with fires on board may receive additional self-inflicted damage.

Listed below are the **AVERAGE** damage points caused by each type of weapon:

AA gun	1	American BB main gun	8
CL main gun	1	21 torpedo	5
CA main gun	2	24 torpedo	7
YAMATO main gun	9	AP-bomb	4
NAGATO, MUTSU main gun	7	HE-bomb	2
other Japanese BB main gun	6		

Only Japanese surface ships may fire the 24' torpedo.

AA guns will be only 50% as accurate as main guns.

Each time a bomb, torpedo or gun hit is scored on a ship, the computer checks to see if an ARMOR PENETRATION has occurred. The chance of a penetration is equal to three times the explosive rating of the weapon (see above) divided by the defense factor of the ship.

Bomb or gun hits that penetrate will cause normal damage plus possible fires, propulsion loss and/or destruction of the ship's weapon systems. Bomb or gun hits that fail to penetrate will cause only 1 damage point.

Torpedo hits that penetrate will cause DOUBLE damage, a loss of at least 5 kts speed plus possible fires, and destruction of weapon systems. Torpedo hits that fail to penetrate will cause normal damage and a loss of at least 5 kts speed.

Carriers hit by bombs, torpedoes or gunfire may sustain additional damage if there are readied aircraft on the decks. The weapon hit will randomly select an aircraft type and if that type of aircraft is on deck then ½ of those aircraft will be destroyed and the fire level will be increased approximately by 1 for each aircraft destroyed. If the destroyed aircraft were armed with bombs or torpedoes then the fire level would increase approximately by 3 for each aircraft destroyed.

11.3 Damage Effects

A ship that sustains damage points greater than or equal to its defense factor will sink. Any ship with a fire level greater than zero may sustain additional damage each turn until the fire is put out.

On the average, a ship's fire level will be reduced by one point each turn unless the fire is out of control. If the fire level is greater than the ship's defense factor, it is out of control and will gain an average of 3 fire levels per turn.

Ships that have suffered more than 50% damage may sustain additional damage each turn. Ships with over 50% damage will frequently suffer loss of propulsion.

Damage to carriers may prevent them from conducting flight operations. Flight operations will be suspended if any of the following conditions exist: (1) fire level is greater than 4 (2) damage is greater than 25% (3) maximum speed is less than 15 kts.

Fires will prevent ships from operating at maximum speed. The adjusted maximum speed of a burning ship is equal to the maximum speed minus the fire level.

11.4 Base Damage

Bases may suffer damage if subjected to bombing or coastal bombardment. Bases suffer 1-2% damage each time they are hit.

At the end of each turn bases will repair 10% of their damage. Bases with over 25% damage will be unable to operate aircraft. In the Midway scenario, Japanese transports may not unload on Midway unless there is 50% or more damage on the base.

EXAMPLE: A base with 40% damage will repair to 36% damage after one turn.

11.5 Weather

The two elements of weather that affect game operations are WIND DIRECTION and CLOUD COVER. Wind direction affects the ability of carriers to launch and recover aircraft, while cloud over affects the ability of air missions to locate enemy TFs/bases.

The weather conditions are subject to change at the start of each turn. There is a 20% chance that the wind direction will change (the new direction is determined randomly). Cloud cover may vary by plus or minus 25% each turn.

The ability of aircraft to locate enemy TFs and bases is reduced by the cloud cover percentage. Also the number of ships spotted in the SIGHTING REPORT will be reduced by the cloud cover percentage.

11.6 Non-Combat Aircraft Losses

Air missions are subject to non-combat losses each time they enter a landing pattern. In daylight with 0% overcast air missions will average 0.5% (each aircraft has 1 chance in 200) losses per landing. Losses are increased by 1% for every 10% of cloud cover and by 10% if it is a NIGHT turn.

EXAMPLE: On a night turn with 40% overcast the loss rate will be 14.5%.

11.7 Scenario Duration

The computer is programmed to end each scenario on a particular date:

CORAL SEA	8 MAY 42
MIDWAY	7 JUN 42
EASTERN SOLOMONS	25 AUG 42
SANTA CRUZ	27 OCT 42

For each scenario the game will automatically end at the completion of the 2100-hour turn.

11.8 Aircraft Classification

Aircraft used in the game are classified as follows:

FIGHTERS: ZEKE, F4F, F2A, P39
DIVE BOMBERS: VAL, SBD, SB2U, A24
TORPEDO BOMBERS: KATE, TBD, TBF
LEVEL BOMBERS: BETTY, NELL, B17, B25, B26
RECONNAISSANCE: JUDY

Although the BETTY and B26 may sometimes carry torpedoes they are still CLASSIFIED as level bombers.

11.9 Aircraft Base Restrictions

Aircraft with a name prefix of "C." are carrier based aircraft. Aircraft with a name prefix of "L." are land based. Carrier based aircraft may operate from either carrier of land bases. Land based aircraft may never land on a carrier.

Aircraft classified as level bombers may not be READIED at a base with an operation limit less than 60.

11.10 Radar

During all scenarios, the American player will receive radar reports of Japanese air missions in the same hex with friendly TFs. Radar reports will be rough estimates (usually exaggerated) of the number of aircraft in the enemy air mission. Radar may occasionally fail to detect some enemy missions (the chance of failure varies with the size of the mission).

11.11 Pilot Ability

The differing abilities of the pilots in the four scenarios is accounted for by altering bomber accuracy and air-attack and survivability ratings as follows:

SCENARIO	US PILOTS	JAPANESE PILOTS
Coral Sea	−1	−1
Midway	0	+1
Eastern Solomons	+1	0
Santa Cruz	+1	0

12.0 SCORING

At the end of the game the players score points for sinking and damaging enemy ships/bases and points for each surviving combat aircraft. The Japanese player scores points for successfully unloading "assault points" at an enemy base.

12.1 Sunk Ships

Points awarded for sinking enemy ships equals TWO X DEFENSE FACTOR. If enemy carriers have been sunk additional points are awarded equaling the aircraft capacity of the carrier. If Midway is captured the Japanese player receives points as if he had "sunk" a carrier with a defense factor of 80 and a capacity of 150 (310 points).

12.2 Damaged Ships/Bases

Points received for damaging enemy ships/bases equals 1 per damage point plus 1 per fire level (your opponent may score more points if you let your ship burn than if you SCUTTLE it) . . .

12.3 Surviving Aircraft

One point is scored for each friendly combat aircraft ON A CARRIER OR BASE at the end of the game.

12.4 Japanese Assault Points

One point is received for each Japanese assault point unloaded at an enemy base.

12.5 Handicap Points

The Japanese player will receive 100 points in the Eastern Solomons scenario. The U.S. player will receive 100 points in the Santa Cruz scenario.

13.0 VICTORY CONDITIONS

At the end of the game victory points will be calculated and the level of victory will be determined by comparing the scores of the two players.

13.1 Victory Levels

Subtract the Japanese Victory Points from the American Victory Points and compare the results to the following table to determine the victory level:

600 and up	American Decisive Victory
300 to 599	American Substantive Victory
100 to 299	American Marginal Victory
−99 to 99	Draw
−299 to −100	Japanese Marginal Victory
−599 to −300	Japanese Substantive Victory
−600 or less	Japanese Decisive Victory

14.0 SOLITAIRE PLAY

When playing solitaire games the computer will command the Japanese forces. There are 4 levels of solitaire difficulty. The level of difficulty is determined when starting a new game and may be altered when restarting a saved game. As the level number is decreased the Japanese forces will perform searches more efficiently. These levels may be used to handicap a two player game if desired. Level 3 is considered the "historical" level.

It is possible to start a game in solitaire mode, save it, and then restart it as a two-player game. To do this, set the main menu to two-player mode before reloading the saved game data.

It is possible to save a two player game and restart it as a solitaire game. This should only be done experimentally as the computer may be confused by many human devised deployments.

15.0 STRATEGY NOTES

15.1 Task Force Movement

Each turn the players will have the chance to change a TF's direction. The TF will move automatically when it accumulates 50 or more movement points. Carrier TFs that are conducting air operations will move very slowly unless they are facing the same direction that the wind is blowing from. The loss of movement points is caused by the carriers alternating between their assigned course and the "WIND FROM" direction to launch/recover aircraft.

15.2 Searching

Searches should be performed by seaplanes whenever possible. Searches are necessary to pinpoint the location of enemy TFs so that they may be attacked. When the general location of the enemy carriers is unknown, then it is important to concentrate the search planes in the areas surrounding the friendly carriers. The total number of search missions should seldom exceed 7 or 8.

15.3 Fighter Patrols

Fighter patrols may be used to attack enemy seaplanes and bomber groups that enter their patrol area. During daylight turns, carrier TFs should maintain at least one fighter mission airborne at all times to shoot down enemy seaplanes. On turns when enemy bomber attacks are expected, the carrier TFs should maintain at least half of their fighter strength in protective fighter patrols. In scenarios where the U.S. player has radar, the carriers can launch 40 to 60 fighters on the turn the incoming bombers are *detected*.

15.4 Bomber Missions

When launching bomber missions, the crucial factors are (1) the number of fighter escorts included and (2) the total number of aircraft formed into each mission. As a rule of thumb a bomber mission should include at least 1 fighter for every 3 bombers to prevent the bombers from being slaughtered by enemy fighter patrols. Bomber missions attacking targets at *normal* range should form large groups of bombers and escorts. Bomber groups attacking targets at *extended* range should form several smaller groups of less than 15 aircraft each. Extended range for Japanese bombers is 6 or 7 hexes. Extended range for U.S. bombers is 4 or 5 hexes.

15.5 Carrier Operations

Carrier operations consist of launching and recovering aircraft. Carriers are limited in the number of operations they may perform each turn due to their limited space. Carriers that "spend" too many of their operations launching aircraft may be unable to recover aircraft on the same turn. Likewise carriers with overcrowded decks (aircraft on deck exceed minimum operation limit) will also be unable to recover aircraft on the same turn. On turns when a large number of aircraft are in landing patterns, the receiving carriers should turn into the wind and clear the decks of excess aircraft. The total aircraft launched should be regulated to insure sufficient remaining operations to land all of the aircraft.

15.6 Coral Sea

The JAPANESE PLAYER should move the transport TFs to Port Moresby and unload the troops. The Japanese carrier TFs should hang near the transport TFs and bomb any U.S. TF that moves into range. Land-based aircraft should concentrate on bombing Port Moresby to reduce the U.S. air presence near the invasion site.

The U.S. PLAYER can get some early target practice using Yorktown's airgroups to bomb the small Japanese TF at Tulagi. The two U.S. carrier groups should rendezvous by the end of the first day and move west during the night hours. The U.S. cruiser TF should move Northwest and attempt to engage the Japanese Transport TFs in daylight surface combat. Weather permitting, a major carrier engagement should occur on the second or third day of the game.

15.7 Midway

All JAPANESE TFs should proceed directly to Midway. There they can unload transports and bombard the U.S. base. When playing the historical set-up, the Japanese carriers should ready their bombers for a major strike against the U.S. carrier TFs. When playing the random set-up the Japanese player should launch a dawn strike to bomb Midway (range permitting). Japanese battleship TFs should make an effort to bombard Midway and then attempt to engage the U.S. TFs in surface combat.

The U.S. PLAYER should reserve all available resources to attack the big Japanese carriers. Air strikes against the transports should be attempted only after the big carriers have all been sunk or disabled. The U.S. player should be careful to avoid a surface engagement with the Japanese battleship TFs.

15.8 Eastern Solomons

The JAPANESE PLAYER should send his carrier TFs Southeast as fast as possible to force an engagement with the U.S. carriers before the WASP group can join them. The transport TF should move to Henderson Field and unload. The transport TF should abort its mission and retreat North if the Japanese carriers are knocked out. Japanese land based bombers should fly one mission per day to bomb Henderson Field. The Japanese battleship TF may bombard Henderson Field or attempt to engage the U.S. carrier TFs in a surface combat.

The U.S. PLAYER should transfer all F4Fs, SBDs and TBFs from Espiritu Santo to Henderson Field at the start of the game. Aircraft based on Henderson should be used to bomb the Japanese transport TFs; U.S. carrier aircraft should be reserved to attack the Japanese carrier TFs. If the U.S. player delays combat to wait for the WASP group to catch up, then the Japanese will have a free hand to pound Henderson Field on the first day.

15.9 Santa Cruz

The JAPANESE PLAYER should send his carrier TFs directly south to force an engagement with the U.S. carriers. The Junyo force should move in the same hex as the other Japanese carrier TF to provide mutual fighter support. The Japanese battleship TFs may bombard Henderson Field or attempt to engage the U.S. TFs in surface combat. Japanese land based aircraft should bomb Henderson Field once per day. The Japanese destroyer TF that starts near Buin may be used to unload troops on Henderson.

The U.S. PLAYER should steer his carrier TFs as close as possible to Henderson Field before engaging the Japanese Carriers. The U.S. carriers should withdraw South at night to avoid the possibility of Surface Combat with the Japanese battleship TFs.

16.0 SCENARIO DATA

CORAL SEA

TF# 1 LOCATION 17, 17

	MG	AA	TT	MS	DF	SP	AP
CV — SHOKAKU	0	16	0	34	55	0	0
CV — ZUIKAKU	0	16	0	34	55	0	0
CA — MYOKO	10	8	32	35	26	3	0
CA — HAGURO	10	8	32	35	26	3	0
DD — ARIAKE	0	5	12	36	7	0	0
DD — YUGURE	0	5	12	36	7	0	0
DD — SHIGURE	0	5	16	34	7	0	0
DD — SHIRATSUYU	0	5	16	34	7	0	0
DD — USHIO	0	6	18	38	7	0	0
DD — AKEBONO	0	6	18	38	7	0	0

TF#2 LOCATION 12, 17

	MG	AA	TT	MS	DF	SP	AP
CVL — SHOHO	0	8	0	28	25	0	0
CA — AOBA	6	4	16	34	20	2	0
CA — KAKO	6	4	16	34	20	2	0
CA — FURUTAKA	6	4	16	34	20	2	0
CA — KINUGASA	6	4	16	34	20	2	0
DD — SAZANAMI	0	6	18	38	7	0	0

TF#3 LOCATION 8, 15

	MG	AA	TT	MS	DF	SP	AP
CL — TENRYU	4	1	6	31	11	0	0
CL — TATSUTA	4	1	6	31	11	0	0
CS — KAMIKAWA MARU	0	4	0	19	12	1	2
DD — OITE	0	2	6	37	6	0	0
DD — ASANAGI	0	2	6	37	6	0	0
TR — TOHO MARU	0	1	0	15	10	0	10
TR — BRAZIL MARU	0	1	0	15	10	0	10
TR — ASUMASAN MARU	0	1	0	15	8	0	8
TR — AKIBASAN MARU	0	1	0	15	10	0	10
TR — HAKUSAN MARU	0	1	0	15	10	0	10
TR — KEIYO MARU	0	1	0	15	8	0	8

TF#4 LOCATION 8, 15

	MG	AA	TT	MS	DF	SP	AP
CL — YUBARI	6	1	4	35	10	0	0
DD — MUTSUKI	0	2	6	37	6	0	0
DD — MOCHIZUKI	0	2	6	37	6	0	0
DD — YAYOI	0	2	6	37	6	0	0
ML — TSUGARU	0	3	0	20	5	0	2
TR — MOGAMIGAWA MARU	0	1	0	15	8	0	8
TR — KINRYU MARU	0	1	0	15	8	0	8
TR — NAGATA MARU	0	1	0	15	8	0	8
TR — SAGARU MARU	0	1	0	15	8	0	8
TR — SHOKA MARU	0	1	0	15	8	0	8
TR — TAMAGAWA MARU	0	1	0	15	8	0	8

TF#5 LOCATION 21, 21

	MG	AA	TT	MS	DF	SP	AP
DD — YUZUKI	0	2	6	37	6	0	0
DD — KIKUZUKI	0	2	6	37	6	0	0
ML — OKINOSHIMA	0	3	0	20	5	0	0
ML — KOEI MARU	0	3	0	20	5	0	0
TR — GOYO MARU	0	1	0	15	8	0	0

TF#6 LOCATION 6, 26

	MG	AA	TT	MS	DF	SP	AP
SS — I22	0	0	18	15	6	0	0
SS — I24	0	0	18	15	6	0	0
SS — I27	0	0	20	15	6	0	0
SS — I28	0	0	20	15	6	0	0

TF#8

	MG	AA	TT	MS	DF	SP	AP
BASE RABAUL	0	90	0	0	90	9	100

TF#9

	MG	AA	TT	MS	DF	SP	AP
BASE LAE	0	30	0	0	80	6	0

TF#10

	MG	AA	TT	MS	DF	SP	AP
BASE TULAGI	0	30	0	0	80	6	10

TF#11

	MG	AA	TT	MS	DF	SP	AP
BASE PORT MORSEBY	0	30	0	0	80	6	90

TF#12

	MG	AA	TT	MS	DF	SP	AP
BASE AUSTRALIA	0	90	0	0	90	9	0

TF#13

	MG	AA	TT	MS	DF	SP	AP
BASE ESPIRITU SANTO	0	30	0	0	80	12	0

TF#14 LOCATION 20, 23

	MG	AA	TT	MS	DF	SP	AP
CV — YORKTOWN	0	8	0	32	50	0	0
CA — ASTORIA	9	8	0	32	24	0	0
CA — PORTLAND	9	8	0	32	24	0	0
CA — CHESTER	9	8	0	32	20	0	0
DD — MORRIS	0	5	12	36	7	0	0
DD — ANDERSON	0	5	12	36	7	0	0
DD — HAMMANN	0	5	12	36	7	0	0
DD — RUSSELL	0	5	12	36	7	0	0

TF#15 LOCATION 20, 28

	MG	AA	TT	MS	DF	SP	AP
CV — LEXINGTON	0	4	0	33	60	0	0
CA — MINNEAPOLIS	9	8	0	32	24	0	0
CA — NEW ORLEANS	9	8	0	32	24	0	0
DD — PHELPS	0	8	8	37	8	0	0
DD — DEWEY	0	5	8	36	7	0	0
DD — FARRAGUT	0	5	8	36	7	0	0
DD — AYLWIN	0	5	8	36	7	0	0
DD — MONAGHAN	0	5	8	36	7	0	0

TF#16 LOCATION 11, 29

	MG	AA	TT	MS	DF	SP	AP
CA — CHICAGO	9	8	0	32	20	0	0
CA — AUSTRALIA	8	4	8	30	24	0	0
CL — HOBART	8	4	8	30	15	0	0
DD — PERKINS	0	5	12	36	7	0	0
DD — WALKE	0	5	12	36	7	0	0

TF#17 LOCATION 20, 28

	MG	AA	TT	MS	DF	SP	AP
DD — WORDEN	0	5	8	36	7	0	0
DD — SIMS	0	5	12	36	7	0	0
TK — NEOSHO	0	1	0	15	10	0	0
TK — TIPPECANOE	0	1	0	15	10	0	0

TF#18 LOCATION 8, 20

	MG	AA	TT	MS	DF	SP	AP
SS — 38	0	0	12	10	4	0	0
SS — 42	0	0	12	10	4	0	0
SS — 44	0	0	12	10	4	0	0
SS — 47	0	0	12	10	4	0	0

PORT MORSEBY

L.P39	17

AUSTRALIA

L.P39	18
L.A24	11
L.B25	19
L.B26	38
L.B17	16

LEXINGTON

C.F4F	22
C.SBD	36
C.TBD	12

YORKTOWN

C.F4F	20
C.SBD	38
C.TBD	13

RABAUL

L.ZEKE	57
L.BETTY	41
L.NELL	45

LAE

L.ZEKE	6

SHOKAKU

C.ZEKE	21
C.VAL	20
C.KATE	21

ZUIKAKU

C.ZEKE	21
C.VAL	21
C.KATE	21

SHOHO

C.ZEKE	12
C.KATE	9

MIDWAY

TF#1 LOCATION 17, 13

	MG	AA	TT	MS	DF	SP	AP
CV — AKAGI	0	12	0	31	60	0	0
CV — KAGA	0	16	0	28	62	0	0
CV — HIRYU	0	12	0	34	33	0	0
CV — SORYU	0	12	0	34	33	0	0
BB — HARUNA	8	8	0	30	61	3	0
BB — KIRISHIMA	8	8	0	30	61	3	0
CA — TONE	8	8	24	35	22	5	0
CA — CHIKUMA	8	8	24	35	22	5	0
CL — NAGARA	7	2	16	35	14	1	0
DD — NOWAKI	0	6	16	35	8	0	0
DD — ARASHI	0	6	16	35	8	0	0
DD — HAGIKAZE	0	6	16	35	8	0	0
DD — MAIKAZE	0	6	16	35	8	0	0
DD — KAZAGUMO	0	6	16	35	8	0	0
DD — YUGUMO	0	6	16	35	8	0	0
DD — MAKIGUMO	0	6	16	35	8	0	0
DD — URAKAZE	0	6	16	35	8	0	0
DD — ISOKAZE	0	6	16	35	8	0	0
DD — TANIKAZE	0	6	16	35	8	0	0
DD — HAMAKAZE	0	6	16	35	8	0	0

TF#2 LOCATION 16, 18	MG	AA	TT	MS	DF	SP	AP
CVL — ZUIHO	0	8	0	28	25	0	0
BB — KONGO	8	8	0	30	61	3	0
BB — HIEI	8	8	0	30	61	3	0
CA — ATAGO	10	8	32	35	26	3	0
CA — CHOKAI	10	8	32	35	26	3	0
CA — MYOKO	10	8	32	35	26	3	0
CA — HAGURO	10	8	32	35	26	3	0
CL — YURA	7	2	16	35	14	1	0
DD — MURASAME	0	5	16	34	7	0	0
DD — SAMIDARE	0	5	16	34	7	0	0
DD — HARUSAME	0	5	16	34	7	0	0
DD — YUDACHI	0	5	16	34	7	0	0
DD — ASAGUMO	0	6	16	35	8	0	0
DD — MINEGUMO	0	6	16	35	8	0	0
DD — NATSUGUMO	0	6	16	35	8	0	0
DD — MIKAZUKI	0	2	6	37	6	0	0

TF#3 LOCATION 12, 11	MG	AA	TT	MS	DF	SP	AP
CVL — HOSHO	0	4	0	25	20	0	0
BB — YAMATO	9	12	0	27	99	6	0
BB — NAGATO	8	8	0	25	62	3	0
BB — MUTSU	8	8	0	25	62	3	0
CL — SENDAI	7	2	16	35	14	1	0
CS — CHIYODA	0	4	0	29	20	9	2
CS — NISSHIN	0	6	0	28	20	9	2
DD — YUKAZE	0	2	2	35	6	0	0
DD — FUBUKI	0	6	18	38	7	0	0
DD — SHIRAYUKI	0	6	18	38	7	0	0
DD — HATSUYUKI	0	6	18	38	7	0	0
DD — MURAKUMO	0	6	18	38	7	0	0
DD — ISONAMI	0	6	18	38	7	0	0
DD — URANAMI	0	6	18	38	7	0	0
DD — SHIKINAMI	0	6	18	38	7	0	0
DD — AYANAMI	0	6	18	39	7	0	0

TF#4 LOCATION 16, 19	MG	AA	TT	MS	DF	SP	AP
CA — KUMANO	10	8	24	37	24	3	0
CA — SUZUYA	10	8	24	37	24	3	0
CA — MIKUMA	10	8	24	37	24	3	0
CA — MOGAMI	10	8	24	37	24	3	0
DD — ASASHIO	0	6	16	35	8	0	0
DD — ARASHIO	0	6	16	35	8	0	0

TF#5 LOCATION 16, 19	MG	AA	TT	MS	DF	SP	AP
CL — JINTSU	7	2	16	35	14	1	0
DD — SHIRANUHI	0	6	16	35	8	0	0
DD — KASUMI	0	6	16	35	8	0	0
DD — KAGERO	0	6	16	35	8	0	0
DD — ARARE	0	6	16	35	8	0	0
APD — 1	0	2	2	20	6	0	1
APD — 2	0	2	2	20	6	0	1
APD — 34	0	2	2	20	6	0	1
TR — KIYOZUMI MARU	0	1	0	15	10	0	10
TR — ZENYO MARU	0	1	0	15	10	0	10
TR — TOA MARU £2	0	1	0	15	10	0	10
TR — ARGENTINA MARU	0	1	0	15	10	0	10
TR — BRAZIL MARU	0	1	0	15	10	0	10
TR — AZUMA MARU	0	1	0	15	10	0	10

TF#6 LOCATION 16, 19	MG	AA	TT	MS	DF	SP	AP
DD — KUROSHIO	0	6	16	35	8	0	0
DD — OYASHIO	0	6	16	35	8	0	0
DD — YUKIKAZE	0	6	16	35	8	0	0
DD — AMATSUKAZE	0	6	16	35	8	0	0
DD — TOKITSUKAZE	0	6	16	35	8	0	0
DD — HATSUKAZE	0	6	16	35	8	0	0
TR — KEIYO MARU	0	1	0	15	8	0	8
TR — GOSHU MARU	0	1	0	15	8	0	8
TR — KANO MARU	0	1	0	15	8	0	8
TR — HOKURIKU MARU	0	1	0	15	8	0	8
TR — KIRISHIMA MARU	0	1	0	15	8	0	8
TR — NANKAI MARU	0	1	0	15	8	0	8
TR — AKEBONO MARU	0	1	0	15	10	0	10

TF#7 LOCATION 16, 19	MG	AA	TT	MS	DF	SP	AP
CS — CHITOSE	0	4	0	29	20	9	2
AV — KAMIKAWA MARU	0	4	0	19	12	1	2
DD — KAYASHIO	0	6	16	35	8	0	0
APD — 35	0	2	2	20	6	0	1

TF#8 LOCATION 20, 16	MG	AA	TT	MS	DF	SP	AP
SS — I168	0	0	18	15	6	0	0

TF#9 LOCATION 16, 19	MG	AA	TT	MS	DF	SP	AP
DMS — TAMA MARU £3	0	2	0	20	5	0	1
DMS — TAMA MARU £5	0	2	0	20	5	0	1
DMS — SHONAN MARU £7	0	3	0	20	5	0	1
DMS — SHONAN MARU £8	0	3	0	20	5	0	1
DE — CH16	0	1	0	15	4	0	1
DE — CH17	0	1	0	15	4	0	0
DE — CH18	0	1	0	15	4	0	0
TR — SOYA	0	1	0	15	10	0	10
TR — MEIYO MARU	0	1	0	15	8	0	8
TR — YAMAFUKU MARU	0	1	0	15	8	0	8

TF#11	MG	AA	TT	MS	DF	SP	AP
BASE MIDWAY	0	30	0	0	80	32	90

TF#12 LOCATION 22, 13	MG	AA	TT	MS	DF	SP	AP
CV — ENTERPRISE	0	8	0	32	50	0	0
CV — HORNET	0	8	0	32	50	0	0
CA — NEW ORLEANS	9	8	0	32	24	0	0
CA — MINNEAPOLIS	9	8	0	32	24	0	0
CA — VINCENNES	9	8	0	32	24	0	0
CA — NORTHAMPTON	9	8	0	32	20	0	0
CA — PENSACOLA	10	8	0	32	21	0	0
CLAA — ATLANTA	0	16	8	32	16	0	0
DD — PHELPS	0	8	8	37	8	0	0
DD — WORDEN	0	5	8	36	7	0	0
DD — MONAGHAN	0	5	8	36	7	0	0
DD — AYLWIN	0	5	8	36	7	0	0
DD — BALCH	0	8	8	37	8	0	0
DD — CORYNGHAM	0	5	12	36	7	0	0
DD — BENHAM	0	4	16	38	7	0	0
DD — ELLET	0	4	16	38	7	0	0
DD — MAURY	0	4	16	38	7	0	0

TF#13 LOCATION 22, 13

	MG	AA	TT	MS	DF	SP	AP
CV — YORKTOWN	0	8	0	32	50	0	0
CA — ASTORIA	9	8	0	32	24	0	0
CA — PORTLAND	9	8	0	32	24	0	0
DD — HAMMAN	0	5	8	36	7	0	0
DD — HUGHES	0	5	8	36	7	0	0
DD — MORRIS	0	5	8	36	7	0	0
DD — ANDERSON	0	5	8	36	7	0	0
DD — RUSSELL	0	5	8	36	7	0	0
DD — GWIN	0	5	10	35	7	0	0

TF#14 LOCATION 19, 14

	MG	AA	TT	MS	DF	SP	AP
SS — CACHALOT	0	0	12	10	4	0	0
SS — FLYING FISH	0	0	24	15	6	0	0
SS — TAMBOR	0	0	24	15	6	0	0
SS — TROUT	0	0	24	15	6	0	0
SS — GRAYLING	0	0	24	15	6	0	0
SS — NAUTILUS	0	0	12	10	4	0	0

TF#15 LOCATION 19, 19

	MG	AA	TT	MS	DF	SP	AP
SS — GROUPER	0	0	24	15	6	0	0
SS — DOLPHIN	0	0	12	10	4	0	0
SS — GATO	0	0	24	15	6	0	0
SS — CUTTLEFISH	0	0	12	10	4	0	0
SS — GUGEON	0	0	24	15	6	0	0
SS — GRENADIER	0	0	24	15	6	0	0

MIDWAY

C.F4F	6
C.TBF	6
L.F2A	21
L.B26	4
L.SB2U	11
L.SBD	16
L.B17	19

ENTERPRISE

C.F4F	23
C.SBD	36
C.TBD	13

HORNET

C.F4F	27
C.SBD	36
C.TBD	14

YORKTOWN

C.F4F	25
C.SBD	36
C.TBD	12

AKAGI

C.ZEKE	21
C.VAL	21
C.KATE	21

KAGA

C.ZEKE	21
C.VAL	21
C.KATE	30

HIRYU

C.ZEKE	21
C.VAL	21
C.KATE	21

SORYU

C.ZEKE	21
C.VAL	21
C.KATE	21
C.JUDY	2

ZUIHO

C.ZEKE	12
C.KATE	12

HOSHO

C.KATE	8

EASTERN SOLOMONS

TF#1 LOCATION 22, 15

	MG	AA	TT	MS	DF	SP	AP
CV — SHOKAKU	0	16	0	34	55	0	0
CV — ZUIKAKU	0	16	0	34	55	0	0
BB — HIEI	8	8	0	30	61	0	0
BB — KIRISHIMA	8	8	0	30	61	3	0
CA — SUZUYA	10	8	24	37	24	3	0
CA — KUMANO	10	8	24	37	24	3	0
CA — CHIKUMA	8	8	24	35	22	5	0
CL — NAGARA	7	2	16	35	14	1	0
DD — NOWAKI	0	6	16	35	8	0	0
DD — MAIKAZE	0	6	16	35	8	0	0
DD — HATSUKAZE	0	6	16	35	8	0	0
DD — AKIGUMO	0	6	16	35	8	0	0
DD — KAZEGUMO	0	6	16	35	8	0	0
DD — MAKIGUMO	0	6	16	35	8	0	0
DD — YUGUMO	0	6	16	35	8	0	0
DD — AKIZUKI	0	8	8	33	9	0	0

TF#5 LOCATION 22, 16

	MG	AA	TT	MS	DF	SP	AP
CVL — RYUJO	0	8	0	29	22	0	0
CA — TONE	8	8	24	35	22	5	0
DD — TOKITSUKAZE	0	6	16	35	8	0	0
DD — AMATSUKAZE	0	6	16	35	8	0	0

TF#3 LOCATION 23, 16

	MG	AA	TT	MS	DF	SP	AP
BB — MUTSU	8	8	0	25	62	3	0
CA — ATAGO	10	8	32	35	26	3	0
CA — MAYA	10	8	32	35	26	3	0
CA — TAKAO	10	8	32	35	26	3	0
CA — MYOKO	10	8	32	35	26	3	0
CA — HAGURO	10	8	32	35	26	3	0
CL — YURA	7	2	16	35	14	1	0
CS — CHITOSE	0	4	0	29	20	9	0
DD — SAMIDARE	0	5	16	34	7	0	0
DD — MURASAME	0	5	16	34	7	0	0
DD — MARUSAME	0	5	16	34	7	0	0
DD — ASAGUMO	0	6	16	35	8	0	0
DD — MINEGUMO	0	6	16	35	8	0	0
DD — NATSUGUMO	0	6	16	35	8	0	0
DD — OYASHIO	0	6	16	35	8	0	0
DD — KUROSHIO	0	6	16	35	8	0	0
DD — HAYASHIO	0	6	16	35	8	0	0

TF#4 LOCATION 20, 14

	MG	AA	TT	MS	DF	SP	AP
CA — CHOKAI	10	8	32	35	26	3	0
CA — AOBA	6	4	16	34	20	3	0
CA — KINUGASA	6	4	16	34	20	2	0
CA — FURUTAKA	6	4	16	34	20	2	0
CL — JINTSU	7	2	16	35	14	1	0
DD — YAYOI	0	2	6	37	6	0	0
DD — UZUKI	0	2	6	37	6	0	0
DD — MUTSUKI	0	2	6	37	6	0	0
DD — UMIKAZE	0	5	16	34	7	0	0
DD — SUZUKAZE	0	5	16	34	7	0	0
APD — 1	0	2	2	20	6	0	1
APD — 2	0	2	2	20	6	0	1
APD — 34	0	2	2	20	6	0	1
APD — 35	0	2	2	20	6	0	1
TR — KINRYU MARU	0	1	0	15	10	0	10

TF#5 LOCATION 27, 28

	MG	AA	TT	MS	DF	SP	AP
SS — I9	0	0	18	15	6	0	0
SS — I15	0	0	18	15	6	0	0
SS — I19	0	0	18	15	6	0	0
SS — I26	0	0	18	15	6	0	0
SS — I17	0	0	18	15	6	0	0
SS — I31	0	0	18	15	6	0	0
SS — I174	0	0	20	15	6	0	0
SS — I11	0	0	18	15	6	0	0
SS — RO34	0	0	10	15	4	0	0

TF#6 LOCATION 30, 25

	MG	AA	TT	MS	DF	SP	AP
SS — I123	0	0	12	10	5	0	0
SS — I175	0	0	12	10	5	0	0
SS — I121	0	0	12	10	5	0	0

TF#10

	MG	AA	TT	MS	DF	SP	AP
BASE RABAUL	0	90	0	0	90	9	90

TF#11

	MG	AA	TT	MS	DF	SP	AP
BASE HENDERSON F.	0	30	0	0	80	6	90

TF#12

	MG	AA	TT	MS	DF	SP	AP
BASE ESPIRITU SANTO	0	30	0	0	80	12	90

TF#13 LOCATION 27, 25

	MG	AA	TT	MS	DF	SP	AP
CV — SARATOGA	0	12	0	33	60	0	0
CA — MINNEAPOLIS	9	8	0	32	24	0	0
CA — NEW ORLEANS	9	8	0	32	24	0	0
DD — FARRAGUT	0	5	8	36	7	0	0
DD — WORDEN	0	5	8	36	7	0	0
DD — MACDONOUGH	0	5	8	36	7	0	0
DD — DALE	0	5	8	36	7	0	0
DD — PHELPS	0	8	8	37	8	0	0

TF#14 LOCATION 27, 25

	MG	AA	TT	MS	DF	SP	AP
CV — ENTERPRISE	0	8	0	32	50	0	0
BB — NORTH CAROLINA	9	20	0	28	81	0	0
CA — PORTLAND	9	8	0	32	24	0	0
CLAA— ATLANTA	0	16	8	32	16	0	0
DD — BALCH	0	8	8	37	8	0	0
DD — MAURY	0	4	16	38	7	0	0
DD — BENHAM	0	4	16	38	7	0	0
DD — GRAYSON	0	5	10	35	7	0	0
DD — ELLET	0	4	16	38	7	0	0
DD — MONSSEN	0	5	10	35	7	0	0

TF#15 LOCATION 27, 31

	MG	AA	TT	MS	DF	SP	AP
CV — WASP	0	8	0	29	35	0	0
CA — SAN FRANCISCO	9	8	0	32	24	0	0
CA — SALT LAKE CITY	10	8	0	32	21	0	0
CLAA— SAN JUAN	0	16	8	32	16	0	0
DD — LANG	0	4	16	38	7	0	0
DD — STERETT	0	4	16	38	7	0	0
DD — AARON WARD	0	4	5	35	7	0	0
DD — STACK	0	4	16	38	7	0	0
DD — FARENHOLT	0	4	5	35	7	0	0
DD — BUCHANAN	0	4	5	35	7	0	0
DD — SELFRIDGE	0	8	8	37	8	0	0

TF#16 LOCATION 13, 14

	MG	AA	TT	MS	DF	SP	AP
SS — 37	0	0	12	10	4	0	0
SS — 40	0	0	12	10	4	0	0
SS — 41	0	0	12	10	4	0	0
SS — 42	0	0	12	10	4	0	0
SS — 45	0	0	12	10	4	0	0
SS — 47	0	0	12	10	4	0	0

HENDERSON F.

L.F4F	19
L.SBD	12

ESPIRITU SANTO

L.F4F	18
L.SBD	12
L.TBF	6
L.B17	18

ENTERPRISE

C.F4F	36
C.SBD	36
C.TBF	15

SARATOGA

C.F4F	36
C.SBD	36
C.TBF	15

WASP

C.F4F	28
C.SBD	36
C.TBF	15

RABAUL

L.ZEKE	34
L.BETTY	25
L.NELL	9
L.VAL	5

SHOKAKU

C.ZEKE	26
C.VAL	26
C.KATE	18

ZUIKAKU

C.ZEKE	27
C.VAL	27
C.KATE	18

RYUJO

C.ZEKE	21
C.KATE	16

SANTA CRUZ

TF# 1 LOCATION 24, 16

	MG	AA	TT	MS	DF	SP	AP
CV — SHOKAKU	0	16	0	34	55	0	0
CV — ZUIKAKU	0	16	0	34	55	0	0
CVL — ZUIHO	0	8	0	28	25	0	0
CA — KUMANO	10	8	24	37	24	3	0
DD — YUKIKAZE	0	6	16	35	8	0	0
DD — TOKITSUKAZE	0	6	16	35	8	0	0
DD — MAIKAZE	0	6	16	35	8	0	0
DD — HATSUKAZE	0	6	16	35	8	0	0
DD — HAMAKAZE	0	6	16	35	8	0	0
DD — ARASHI	0	6	16	35	8	0	0
DD — AMATSUKAZE	0	6	16	35	8	0	0

TF#2 LOCATION 23, 16

	MG	AA	TT	MS	DF	SP	AP
CV — JUNYO	0	12	0	25	30	0	0
DD — KUROSHIO	0	6	16	35	8	0	0
DD — HAYASHIO	0	6	16	35	8	0	0

TF#3 LOCATION 25, 17

		MG	AA	TT	MS	DF	SP	AP
BB	—KONGO	8	8	0	30	61	3	0
BB	—HARUNA	8	8	0	30	61	3	0
CA	—ATAGO	10	8	32	35	26	3	0
CA	—MAYA	10	8	32	35	26	3	0
CA	—TAKAO	10	8	32	35	26	3	0
CA	—MYOKO	10	8	32	35	26	3	0
CL	—IZUZU	7	2	16	35	14	1	0
DD	—UMIKAZE	0	5	16	34	7	0	0
DD	—SUZUKAZE	0	5	16	34	7	0	0
DD	—KAWAKAZE	0	5	16	34	7	0	0
DD	—OYASHIO	0	6	16	35	8	0	0
DD	—KAGERO	0	6	16	35	8	0	0
DD	—MAKINAMI	0	6	16	35	8	0	0
DD	—NAGANAMI	0	6	16	35	8	0	0
DD	—TAKANAMI	0	6	16	35	8	0	0

TF#4 LOCATION 24, 17

		MG	AA	TT	MS	DF	SP	AP
BB	—HIEI	8	8	0	30	61	3	0
BB	—KIRISHIMA	8	8	0	30	61	3	0
CA	—SUZUYA	10	8	24	37	24	3	0
CA	—CHIKUMA	8	8	24	35	22	5	0
CA	—TONE	8	8	24	35	22	5	0
CL	—NAGARA	7	2	16	35	14	1	0
DD	—URAKAZE	0	6	16	35	8	0	0
DD	—TANIKAZE	0	6	16	35	8	0	0
DD	—ISOKAZE	0	6	16	35	8	0	0
DD	—AKIGUMO	0	6	16	35	8	0	0
DD	—KAZEGUMO	0	6	16	35	8	0	0
DD	—MAKIGUMO	0	6	16	35	8	0	0
DD	—YUGUMO	0	6	16	35	8	0	0
DD	—TERUZUKI	0	8	8	33	9	0	0

TF#5 LOCATION 12, 17

		MG	AA	TT	MS	DF	SP	AP
CL	—YURA	7	2	16	35	14	1	1
DD	—AKATSUKI	0	6	18	38	7	0	1
DD	—IKAZUCHI	0	6	18	38	7	0	1
DD	—YUDACHI	0	5	16	34	7	0	1
DD	—SHIRATSUYU	0	5	16	34	7	0	1
DD	—MURASAME	0	5	16	34	7	0	1
DD	—SAMIDARE	0	5	16	34	7	0	1
DD	—HARUSAME	0	5	16	34	7	0	1
DD	—AKIZUKI	0	8	8	33	9	0	1

TF#6 LOCATION 27, 23

		MG	AA	TT	MS	DF	SP	AP
SS	—I4	0	0	20	15	6	0	0
SS	—I5	0	0	20	15	6	0	0
SS	—I7	0	0	20	15	6	0	0
SS	—I8	0	0	20	15	6	0	0
SS	—I9	0	0	18	15	6	0	0
SS	—I15	0	0	18	15	6	0	0
SS	—I21	0	0	18	15	6	0	0
SS	—I22	0	0	20	15	6	0	0
SS	—I174	0	0	20	15	6	0	0

TF#7 LOCATION 29, 27

		MG	AA	TT	MS	DF	SP	AP
SS	—I24	0	0	12	10	5	0	0
SS	—I175	0	0	12	10	5	0	0
SS	—I176	0	0	12	10	5	0	0

TF#9

		MG	AA	TT	MS	DF	SP	AP
BASE	BUIN	0	30	0	0	80	6	30

TF#10

		MG	AA	TT	MS	DF	SP	AP
BASE	RABAUL	0	90	0	0	90	9	90

TF#11

		MG	AA	TT	MS	DF	SP	AP
BASE	HENDERSON F.	0	30	0	0	80	6	90

TF#12

		MG	AA	TT	MS	DF	SP	AP
BASE	ESPIRITU SANTO	0	30	0	0	80	32	60

TF#13 LOCATION 30, 24

		MG	AA	TT	MS	DF	SP	AP
CV	—ENTERPRISE	0	8	0	32	50	0	0
BB	—SOUTH DAKOTA	9	16	0	27	82	0	0
CA	—PORTLAND	9	8	0	32	24	0	0
CLAA	—SAN JUAN	0	16	8	32	16	0	0
DD	—MAURY	0	4	16	38	7	0	0
DD	—MAHAN	0	5	12	36	7	0	0
DD	—CUSHING	0	5	12	36	7	0	0
DD	—PRESTON	0	5	12	36	7	0	0
DD	—SMITH	0	5	12	36	7	0	0
DD	—CONYNGHAM	0	5	12	36	7	0	0
DD	—SHAW	0	5	12	36	7	0	0
DD	—PORTER	0	8	8	37	8	0	0

TF#14 LOCATION 30, 24

		MG	AA	TT	MS	DF	SP	AP
CV	—HORNET	0	8	0	32	50	0	0
CA	—NORTHAMPTON	9	8	0	32	20	0	0
CA	—PENSACOLA	10	8	0	32	21	0	0
CLAA	—SAN DIEGO	0	16	8	32	16	0	0
CLAA	—JUNEAU	0	16	8	32	16	0	0
DD	—MUSTIN	0	5	12	36	7	0	0
DD	—MORRIS	0	5	12	36	7	0	0
DD	—ANDERSON	0	5	12	36	7	0	0
DD	—HUGHES	0	5	12	36	7	0	0
DD	—RUSSELL	0	5	12	36	7	0	0
DD	—BARTON	0	4	5	35	7	0	0

TF#15 LOCATION 15, 18

		MG	AA	TT	MS	DF	SP	AP
SS	—37	0	0	12	10	4	0	0
SS	—40	0	0	12	10	4	0	0
SS	—42	0	0	12	10	4	0	0
SS	—45	0	0	12	10	4	0	0
SS	—47	0	0	12	10	4	0	0

TF#16 LOCATION 28, 17

		MG	AA	TT	MS	DF	SP	AP
SS	—SNAPPER	0	0	20	15	5	0	0
SS	—SWORDFISH	0	0	20	15	5	0	0
SS	—TROUT	0	0	24	15	6	0	0
SS	—GRAMPUS	0	0	24	15	6	0	0
SS	—GUGEON	0	0	24	15	6	0	0

HENDERSON F.	
L.P39	12
L.F4F	26
L.SBD	20
L.TBF	2

ESPIRITU SANTO	
L.F4F	23
L.B17	39

ENTERPRISE	
C.F4F	30
C.SBD	31
C.TBF	10

HORNET	
C.F4F	36
C.SBD	36
C.TBF	15

RABAUL	
L.ZEKE	36
L.BETTY	31
L.NELL	28
L.VAL	24
L.KATE	12

BUIN	
L.ZEKE	29

SHOKAKU	
C.ZEKE	27
C.VAL	27
C.KATE	18

ZUIKAKU	
C.ZEKE	27
C.VAL	18
C.KATE	18

ZUIHO	
C.ZEKE	21
C.KATE	6

JUNYO	
C.ZEKE	18
C.VAL	18
C.KATE	9

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STRATEGIC SIMULATIONS INC.

If you have any questions or problems regarding the program or game, please send a self-addressed, stamped envelope with your question to: *STRATEGIC SIMULATIONS, INC., 1046 N. Rengstorff Ave., Mountain View, CA 94043.*

Or call our Hotline Number: *(415) 964-1200* every weekday, 9 to 5 (P.S.T.).

AIRCRAFT CHARACTERISTICS

AIRCRAFT TYPE	MAX SPEED	AIRCRAFT ENDURANCE	BOMBER ACCURACY	AIR-TO-AIR COMBAT	
				ATTACK	SURVIVE
C.ZEKE	4	4	–	20	20
L.ZEKE	4	9	–	17	17
VAL	4	4	15*	(2)	3
KATE	4	4	7/3*	(2)	3
BETTY	4	12	4/2	(2)	3
NELL	3	10	1	(2)	3
JUDY	4	4	–	(2)	5
F4F	4	3	–	17	20
F2A	4	3	–	10	5
P39	5	2	–	12	10
SBD	4	3	9*	(4)	9
SB2U	3	4	1	(1)	1
TBD	3	3	2/1	(1)	1
TBF	4	4	2/1	(4)	8
B26	4	5	1	(5)	10
B25	4	6	1	(5)	10
B17	4	10	1	(12)	25
A24	4	3	1	(4)	9
SEAPLANE	3	6,18	–	(0)	0

( ) = defensive fire only
/ = torpedo/high explosive bomb
, = ship-based, land-based

*In the Midway scenario the land based SBDs have an accuracy of 1. The land based VALs and KATEs are 50% as accurate as the carrier based versions.

AIRCRAFT CLASSIFICATION

FIGHTERS: ZEKE, F4F, F2A, P39
DIVE BOMBERS: VAL, SBD, SB2U, A24
TORPEDO BOMBERS: KATE, TBD, TBF
* **LEVEL BOMBERS**: BETTY, NELL, B17, B25, B26
RECONNAISSANCE: JUDY

* Although the BETTY and B26 may sometimes carry torpedoes, they are still *classified* as level bombers.

PILOT ABILITY

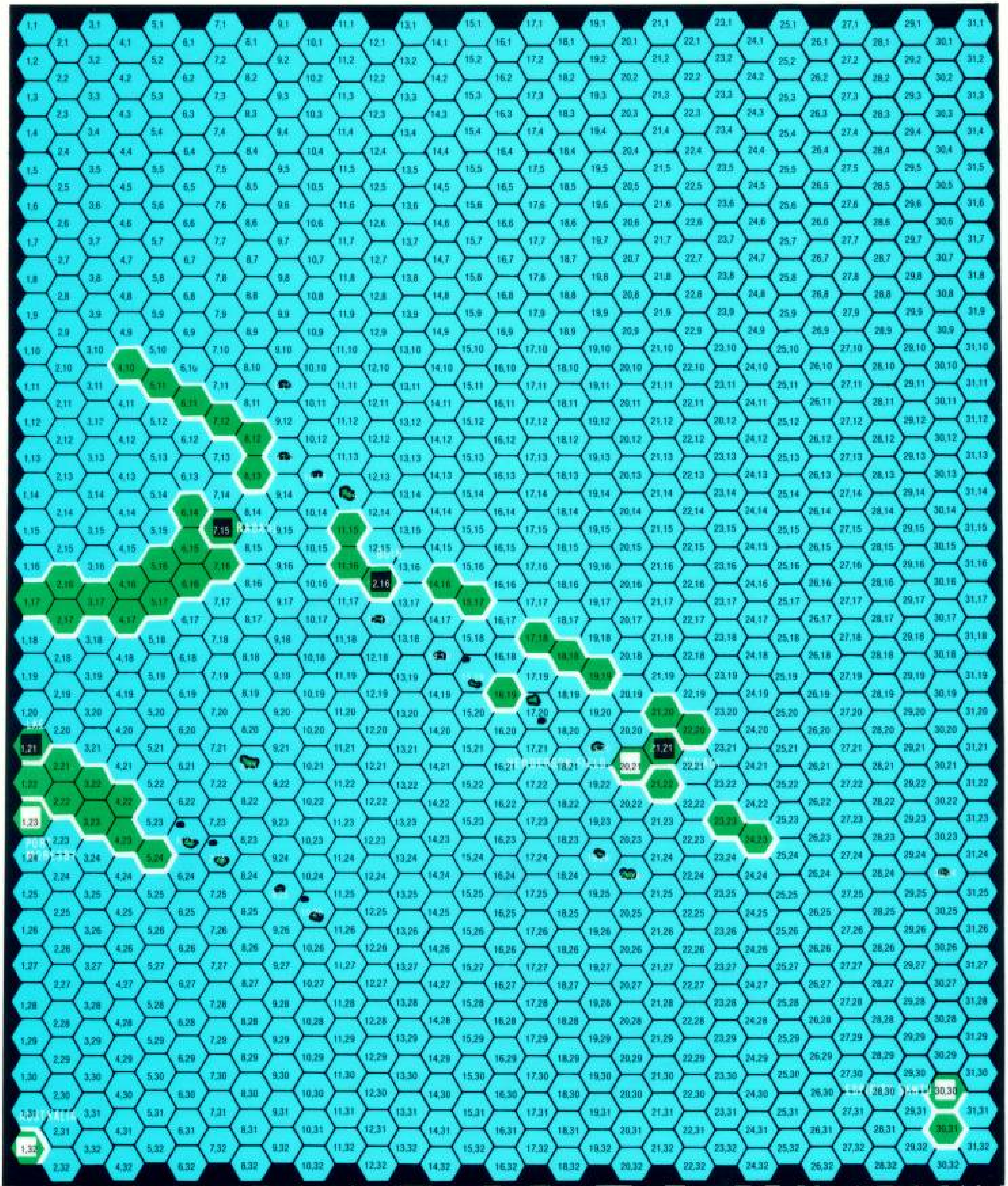
SCENARIO	U.S. PILOTS	JAPANESE PILOTS
Coral Sea	−1	−1
Midway	0	+1
Eastern Solomons	+1	0
Santa Cruz	+1	0

MINIMUM OPERATION LIMITS

Akagi	12	Lexington	12
Kaga	12	Saratoga	12
Hiryu	12	Yorktown	12
Soryu	12	Enterprise	12
Shokaku	12	Hornet	12
Zuikaku	12	Wasp	11
Junyo	9		
Shoho	6		
Zuiho	6		
Ryujo	6		
Hosho	3		

SHIP DAMAGE

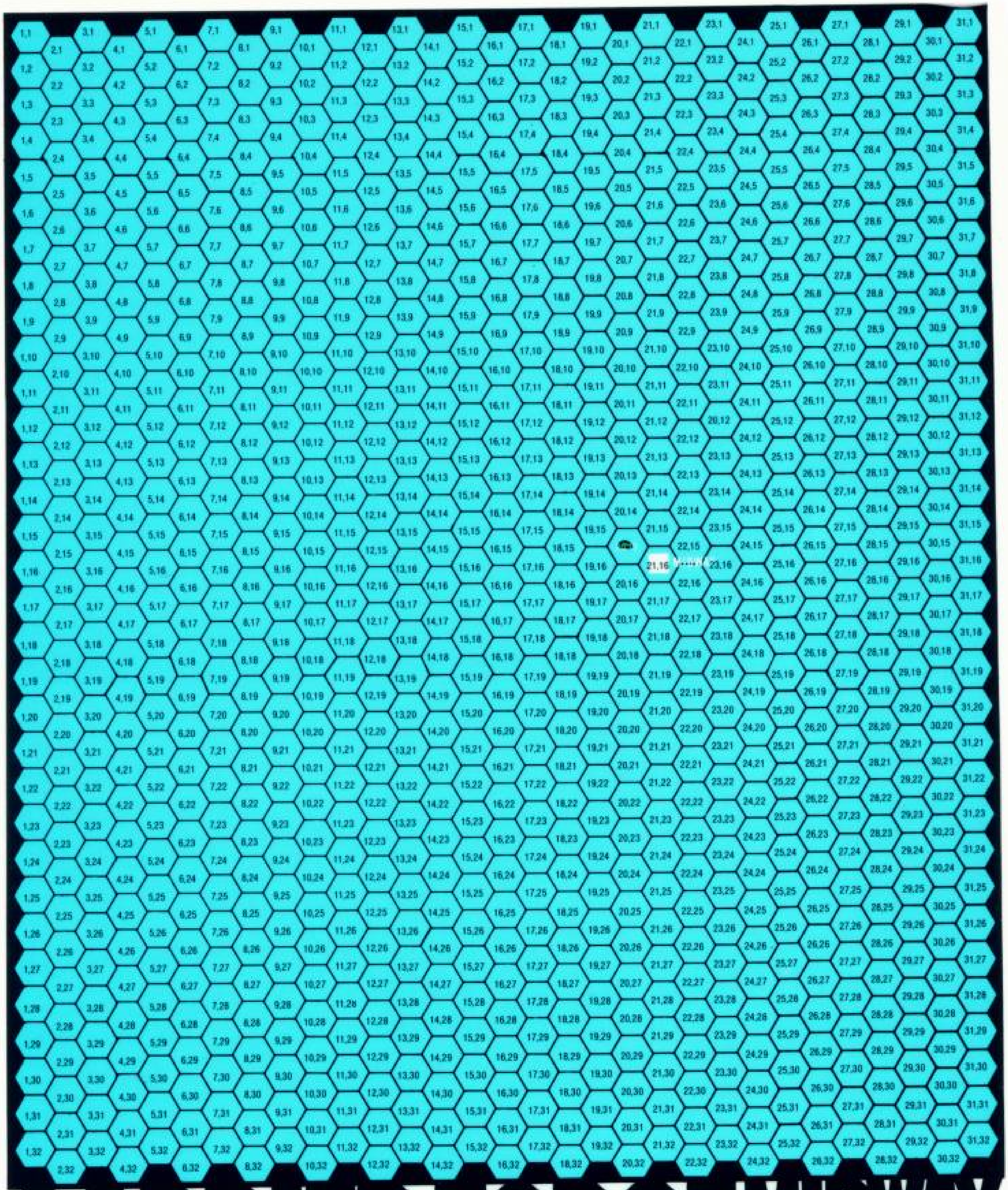
AA gun	1	American BB main gun	8
CL main gun	1	21 torpedo	5
CA main gun	2	24 torpedo	7
YAMATO main gun	9	AP-bomb	4
NAGATO, MUTSU main gun	7	HE-bomb	2
Other Japanese BB main gun	6		



CARRIER FORCE™

SANTA CRUZ
SOLOMONS
CORAL SEA

- ⬢ WHITE BORDERS: Impassable land masses
- □ U.S. air base
- ■ Japanese air base



CARRIER FORCE™ MIDWAY

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